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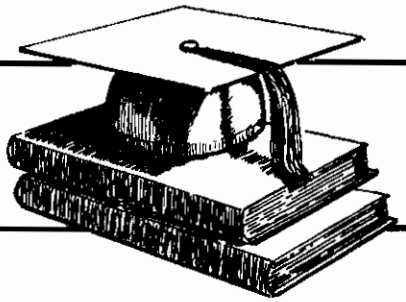

PROFESSIONAL READING

REVIEW ARTICLE

POLITICS AMONG DATA: A REVIEW OF THE *SIPRI YEARBOOK 1979**

by

Stephen M. Meyer**

Even the most casual student of defense studies, arms control, and national security affairs has undoubtedly had recourse to at least one publication of the Stockholm International Peace Research Institute (SIPRI). Founded in 1966 with the purpose of examining the "problems of peace and conflict, especially those of disarmament and arms regulation," the scope, magnitude, and quantity of SIPRI publications is truly impressive. Foremost among these is the *SIPRI Yearbook:* an annual chronicle (first published in 1969) of "analyses of the world's arms races, and attempts to stop them." The *SIPRI Yearbook* is comprised of a multitude of tables (e.g., military expenditures, arms production, arms trade, naval forces), technical expositions (e.g., new ASW techniques, methods for destroying chemical weapons), and reports on new developments in weaponry and corresponding efforts to control them (e.g., nuclear proliferation, new naval weapons, etc.).

Unfortunately, for all its laudatory goals and efforts, the *SIPRI Yearbook* suffers from a readily apparent bias: it is the United States that drives the U.S.-Soviet military competition, a competition in which the hapless Russians are merely struggling to provide themselves with adequate security. Whether or not this bias is intentional, or an accidental byproduct of the fact that the availability of information pertaining to what the United States does (and contemplates doing) in the military field is several orders of magnitude greater than that for the U.S.S.R., is beyond the ability of this reviewer to judge. Nonetheless the result is some highly misleading, embarrassingly incomplete, and in several instances purely erroneous, analyses and conclusions.

The *SIPRI Yearbook* contains a number of discussions that insinuate that the United States has been pursuing a capability to destroy the Soviet land-based ICBMs. In the introduction we learn that, as a result of planned U.S. strategic force improvements:

> . . . The Mark-12A warhead with the NS-20 guidance system will, in fact, be able to destroy Soviet ICBMs in normal silos with a probability of nearly 60 percent for one and about 95 percent for two shots.

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*London: Taylor and Francis, 1979, 698pp.

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Quite clearly there is either an error here, or this represents a new form of probability theory. If there is a single-shot kill probability (SSKP) of .60, then the two-shot kill probability (TSKP) is of the order of 84 percent. To achieve a TSKP approaching 95 percent, a Mark-12A warhead would need a SSKP nearing .77.*

Giving the Mark-12A a yield of 350 kt (from SIPRI) and a CEP of 200 meters (also from SIPRI), a 0.60 SSKP suggests an assumed average Soviet silo hardness near 1,500 psi—a 0.80 SSKP implies something closer to 1,000 psi. Neither of these is implausible. So we shall simply rule against Soviet civil engineering prowess and give the SIPRI analysts the benefit of the doubt by assigning Mark-12A a 0.77 SSKP, and assume that the discrepancy in the book is some kind of odd transcription error. The question remains: to what extent might the U.S. ICBM modernization program (i.e., the Mark-12A warhead and the NS-20 guidance system) enhance the U.S. counterforce potential over the next 7 to 8 years? Using the data presented in the *SIPRI Yearbook* on missiles, yields, CEPs, etc. and then assuming that all U.S. ICBMs have a systems reliability of 90 percent (unrealistic) and that warhead detonations produce no fratricide problems for a 2-on-1 attack (highly unlikely), we obtain the following results. In 1975, had the U.S. fired *all* its ICBMs (*Minuteman II, III,* and *Titan II*) in a 2-on-1 attack, about 29 percent of all Soviet ICBMs might have been destroyed (461 out of 1,598 ICBMs). By upgrading all *Minuteman III* ICBMs in 1979 with the NS-20 guidance system, the United States could possibly destroy 54 percent of all Soviet ICBMs (760 out of 1,398), again having to fire off all U.S. ICBMs. Assuming further that in 1983 all *Minuteman IIIs* have both the Mark-12A warhead and the NS-20 guidance system, the United States might be able to remove 64 percent of the Soviet ICBM force (890 out of 1,398 ICBMs)—but still having to fire all its ICBMs. In this last instance, the United States would be left with no land-based ICBMs, while the U.S.S.R. would have a residual force of 508 missiles loaded with 1,450 RVs! Even this worst of worst-case scenarios (from the Soviet perspective) can hardly be viewed as a U.S.-posed threat to Soviet ICBMs.

Interestingly enough, SIPRI is apparently unaware of the possibility of a Soviet counterforce threat to U.S. ICBMs (a topic that can be found throughout much of the source material cited in the *SIPRI Yearbook*). Once again using the SIPRI tables, we will discount the Soviets as technically backward and assume that over the next 7 to 8 years their ICBMs have no better than an 80 percent reliability. Around 1975 a 2-on-1 attack by the Soviets using 144 SS-9s, 650 SS-11s and 30 SS-13s might have destroyed 16 percent of the U.S. ICBMs.

By 1979, however, the Soviets had deployed a new generation of ICBMs. With 310 SS-19s and 31 SS-18s the Soviets could contemplate destroying 45 percent of the U.S. ICBM force in a 2-on-1 attack. Finally, if we assume that over the next 7 to 8-year period the Soviets are only able to attain current U.S. CEPs—350 meters—then the preceding 2-on-1 attack yields 63

*I should point out that the TSKP is a *hypothetical* maximum. Owing to the lack of experimental data on fratricide effects, the actual average probability of destroying a silo with two nuclear warheads arriving and detonating in succession is likely to be much lower than this hypothetical maximum. This is because the second warhead faces a substantial likelihood of being destroyed by the effects of the detonation of the first weapon. The precision necessary for getting the second warhead through the fratricide window of the first warhead is a key variable.

percent of the U.S. ICBM force destroyed.* The residual balance would be 1,057 Soviet ICBMs loaded with 1,850 RVs facing 370 U.S. ICBMs with 780 RVs.**

We find today the United States would have to use up all of its ICBMs to destroy about 54 percent of the Soviet ICBM force, while the Soviets would need only employ 24 percent of their ICBM force to ensure destruction of a somewhat smaller fraction of the U.S. ICBM force. Yet over the next several years, and following the U.S. modernization program that SIPRI finds so disturbing, it would still take the entire U.S. ICBM force to destroy upwards of 64 percent of the Soviet ICBMs (or, 61 percent of Soviet RVs). The Soviets, however, could achieve an equal level of damage against the United States using little more than 24 percent of their ICBMs. Thus it seems that even after we skew all our assumptions to favor U.S. weapons, and use the SIPRI data which (when compared to other publicly available and reliable sources of data) exhibit a similar "tilt" against Soviet technology, it is the Soviet Union that currently possesses the more substantial counterforce capability. Moreover, over the next 7 to 8 years growing Soviet counterforce capabilities will further eclipse U.S. counterforce potentials.*** To be sure, I consider either scenario absurd, but if SIPRI demands that someone carry the onus for provoking a countersilo arms race and for threatening the land-based deterrent, it must be the Russians.

The next interesting anomaly can be found in the tables of military expenditures. There one finds that Soviet defense spending has increased (in constant dollars) from $58 billion in 1968 to $71 billion in 1978 (or if you prefer, $32.5 billion rubles in 1968 to $39.7 billion rubles in 1978–SIPRI claims these are in approximately constant rubles). Either way, based on the complete data from the tables, SIPRI claims a rather meager 1.5-2.0 percent real increase in Soviet defense spending per year. Yet from 1972 through 1978 the Soviets proceeded to procure a new generation of four ICBMs and two SLBMs, a new generation SSBN, a new generation of theater nuclear weapons, increase their armed forces by 300,000 men, radically expand their tactical air force, reequip their ground forces with modern tanks, armored fighting vehicles, and artillery, and finance creation of a blue-water navy. All this, including some research, development, testing and engineering, on a paltry 2 percent a year increase--or if one is to accept SIPRI's dollar figures: a $13 billion cumulative supplement over 10 years. This is truly remarkable considering that the MX missile alone (excluding basing mode) is expected to cost the United States some $10-15 billion over the next decade.

Next we turn to the topic of the arms trade. SIPRI's analyses of "the arms trade" are restricted to major weapons systems: aircraft, armored fighting vehicles, missiles, and warships. In other words, transfers and sales of rifles, machineguns, bazookas, grenade launchers, mortars, mines, etc. are not incorporated into the SIPRI data base. Thus an examination of the *SIPRI Yearbook* tables does not reflect Soviet arms transfer to such nations as Angola, nor the real value of reoutfitting the Ethiopian Army. Another subtle fact that seems to have eluded the SIPRI authors is that it is the Soviet Union that underwrites the international transfer of

*Many analysts believe that the SS-18s and SS-19s have this CEP today.

**Anyone who would like to see the calculations used in this review is welcome to write the author.

***For those who might say how about the MX come 1987, I respond: how about the next generation of Soviet ICBMs come 1984?

arms to terrorist groups, guerrilla organizations, separatist movements, and other nonstate military actors. (Are not such transfers of arms an important contributing factor to international conflict, tensions, etc.?) Correspondingly, it is the United States that transfers arms to the recognized governments of many of these states to support their efforts to put down insurrection. Thus there should be little surprise that the United States *appears* to be the world's leading arms supplier: such nonstate military actors as the PLO, the Basques, and the Sandinistas use guns, rockets, and mines (provided by the Soviets) that are not counted by SIPRI, while such national governments as Israel, Spain, and Nicaragua use, in part, aircraft and other heavy military equipment in "defense."* Once again, the United States assumes the image of the culprit. Incidentally, readers might be interested to know that between 1974 and 1978 arms exports represented over 13 percent of all Soviet exports. For the United States, arms exports were only 5 percent of all exports. Whose export policies seem to emphasize arms trading?

The chapter entitled "Command and Control of the Sea-Based Deterrent: the Possibility of a Counterforce Role" is either a naive analysis or intentionally misleading. Consider the discussion comparing U.S. and Soviet SLBM capabilities:

> . . . If . . . numbers of submarines are examined, the Soviet Union appears to have a distinct advantage of about 90 to 41 . . . . If numbers of missiles are compared, the Soviet Union again appears to have an advantage—1,034 to 656.
>
> In terms of RVs . . . this advantage is reversed—the USA has about 5,000 as compared with about 1,700 for the Soviet Union.

Quite correctly, SIPRI notes that the latter comparison gives a "reasonable indication of the relative 'countervalue' capabilities of the United States and the U.S.S.R." Then SIPRI, unfortunately, proceeds on to the topic of counterforce roles for SSBN-SLBMs.

> . . . the counterforce effectiveness of a warhead can be summarized in the concept of "lethality" or K,
>
> $$K = Y^{2/3}/CEP^2.$$*

SIPRI then goes on to compute the comparative "lethalities" of the U.S. and Soviet SLBM forces by multiplying the K value for a single RV times the total number of RVs in the corresponding SSBN-SLBM force. For the United States the total lethality is 7,106 vs. a mere 810 for the U.S.S.R. ". . . The figures indicate the vastly greater effectiveness of the U.S. SLBM arsenal." That is, an alleged counterforce effectiveness.

This is simply ridiculous. First off, the *cumulative* K value has no physical interpretation; it has no intuitive meaning as a measure of merit of aggregate counterforce effectiveness either absolute or relative. As a scalar measure it has no upper bound. Using SIPRI's own figures for yields and CEPs of the various SLBMs, and assuming an average silo (hard-target) hardness of 1,000 psi, the U.S. lethality index of 7,106 reflects the rather poor ability to destroy 105 or so of the 1,398 ICBM silos (or 7.5 percent of the Soviet ICBM force). The U.S.S.R. lethality of only 810 reflects a somewhat weaker showing: the ability to destroy about 22 of 1,054 U.S. ICBMs (or 2.1 percent of the

*This discussion does not mean to judge the morality of either U.S. or Soviet policy, merely that SIPRI's inclusion criteria inevitably biases the data and the analyses against the United States and in favor of the U.S.S.R.

* Y is the yield in megatons of the nuclear warhead, while CEP is the circular error probable of the RV.

U.S. ICBM force).* These figures hardly demonstrate "a vastly greater effectiveness" for counterforce of the U.S. SLBM force or a "startling asymmetry" in the SSBN-SLBM based counterforce capability of the two countries. To compare SSBN-SLBM forces on the basis of their cumulative "lethality" index is sheer nonsense.

The chapter on the military use of outer space and the chapter on ASW and its implications for a counterforce first strike exhibit a different form of bias. In these two instances SIPRI compares current Soviet capabilities and deployed systems (in an almost cursory fashion) with U.S. R&D programs for which, in some instances, no operational hardware yet exists. When one compares U.S. concepts and techniques that may (or may not) materialize in 1990 against existing Soviet hardware, which country do you think will (and should) look more formidable?

I should mention that interleafed between all this are chapters concerned with nuclear power and nuclear proliferation, the expansion of naval forces, chemical weapon destruction issues, and the U.N. special session on disarmament, that are informative and will be of interest to those who wish to keep up with developments in 1978.

Let me conclude with some general observations. The SIPRI data reflects the best that U.S. systems can be expected to do and the worst that Soviet systems can achieve—what some might refer to as a yearbook of Soviet worst-case assumptions. When U.S. defense officials, military officers, and intelligence analysts rate a U.S. system very highly—or a Soviet system as poor—SIPRI readily accepts the testimony and approvingly cites it. However, whenever U.S. specialists call attention to more formidable and threatening Soviet weapons systems, SIPRI is quick to discount and dismiss such testimony. The index chosen for use in analyses and the level of detail of the analyses themselves can only produce results that form an image of the Soviet Union living in the military shadow of the United States. This image is further reinforced by discussions which compare U.S. R&D concepts with current existing Soviet hardware as though they were one and the same. Finally, the detailed enumeration of U.S. R&D programs (SIPRI reads *Aviation Week & Space Technology* and Congressional Hearings) without mention of all but a few of the most inconsequential Soviet efforts (and the fact that Soviet R&D is equally active—they just don't publish that often) is one more way in which readers get a very misleading impression about the nature of the U.S.-Soviet military competition.

Reading the *SIPRI Yearbook* cannot help but leave the reader with the sharp image of America on the march—brimming with lasers, neutrino communication systems (!), and particle-beam defense systems. Meanwhile, back in the besieged U.S.S.R., engineers are just beginning to grasp the fundamental principles of inertial guidance. It is hard to understand how the interests of peace and disarmament—interests that SIPRI claims to serve—are advanced by biased data, biased reporting, and biased and incomplete analyses. The great pity in all this is not the obvious "tilt" of the *SIPRI Yearbook*, but more importantly, that it has become one of the primary sources of security and arms control data and analyses throughout the world.

*These calculations assume 90 percent of all U.S. warheads detonate successfully, while only 80 percent of Soviet RVs successfully explode. A 2-on-1 fratricide-limited attack is assumed in all cases. Though beyond the scope of this review, the actual ability of a 40 kt weapon to inflict damage to a silo is below that which the ("back-of-envelope") scaling law calculation suggests. This discrepancy is based on differences in the characteristics in impulse and phase duration of the shock waves imparted by the relatively low yield weapons. Thus the "K" value and even my probability-of-kill calculations overestimate the effects of a *Poseidon* RV against a silo.

BOOK REVIEWS

Coffey, Kenneth J. *Strategic Implications of the All-Volunteer Force: The Conventional Defense of Central Europe.* Chapel Hill: University of North Carolina Press, 1979. 210pp.

This effort is excellent—comprehensive and accurate. The author provides another piece to the puzzling question of how a democratic republic provides itself the best and most credible defense at a cost, physically and spiritually, that the citizenry is willing to bear. Though the strategic situation and the American view regarding conscription has changed somewhat since publication, the study, which focuses on the AVF's capability to provide a conventional defense for Central Europe, is a valid benchmark for new assessments.

Coffey first traces early opposition to the war in Vietnam and the draft. The earliest American military traditions established by the Colonials were to fight only defensive wars with every able-bodied man obligated to serve. Until the citizen army became a professional standing army these traditions remained an integral aspect of the American way. The Vietnam era opposition was to a war unrelated to the nation's defense, and fought with forces that reflected the inequitable nature of the draft. The author devotes one chapter to draft reform and follows it with a chapter on the political realities that forced the abandonment of the Selective Service system.

The remainder of the book examines the formation and the early years of the All-Volunteer Force, and its effect on total force requirements for the conventional defense of Central Europe. The author treats thoroughly every important aspect of this problem. He is especially lucid in calling for reconciliation between America's strategic force capabilities and its commitments, but he did not know of the imminent formation of a Rapid Deployment Force.

This book inspires one now to explore new directions. NATO has contained the Soviet threat to the areas directed by its Charter. As the realities of international power realignments became evident, coincident reassessments of the Soviet threat did not occur. This fact and the perception of the United States diminished in power and desire to defend outside of the threat regions identified with NATO interests have emboldened the Soviet Union to threaten other areas of the world. The Soviet Union intends to exacerbate the West's and Japan's energy dependence on the Middle East, and encircle China to its southwest and southeast with regimes unfriendly to it. The Soviet Union perceives China to be its primary adversary, both as a potential military aggressor and ideological rival. Recent Soviet actions in the Middle East and Southwest Asia represent either a progressive step in spreading its influence and ideology or an initial stage in an effort to curb its failure to widen its influence and ideology.

These possibilities, tied closely to America's reduced military capability, return this nation to its tradition to fight only defensive wars. There is no reason not to return to another tradition. Kenneth Coffey explores the alternatives to the AVF, including some based not on compulsion as the author asserts, but on universal obligation. Chapter IX should be read with care.

FRANCIS P. BUTLER
Major, U.S. Army

Dengler, Dieter. *Escape from Laos.* San Rafael, Calif.: Presidio Press, 1979, 211pp.

Every war has its POWs, prison camps, and escape stories. Dieter Dengler's incredible story, *Escape from Laos,* will certainly take a prominent place in representing the Vietnam war.

A naturalized citizen of the United States, the effects of Dengler's boyhood days in Germany during which his father was killed in action, his home destroyed by bombs, and his family forced to scavenge for food were perhaps instrumental in his living through the ordeal he describes. A U.S. Navy A-1 pilot shot down over Laos in February 1966 and captured a short time afterwards, he survived a torturous forced march to a Laotian prison camp, escaping once for a short period en route. In the camp where he was incarcerated with two Americans and four Asians he was starved, humiliated, forced to live like an animal, and beaten, but never lost his determination to escape. Although some of his actions were admittedly impetuous, he brought all his imagination, instinct, escape and evasion training, and spirit into play in planning and in executing his final escape with the other prisoners.

After several aborted attempts and having been threatened to be killed by the guards (themselves close to starvation during the prolonged dry season), an escape was made. Splitting up, Dengler and an Air Force helicopter pilot struck out on their own hoping to find a river down which they could float to freedom. Leeches, mosquitos, monsoon rains, cold, disease, and hunger all took their toll on the pair. Disoriented by curved ridges and twisting streams, they traveled in giant circles: at one time crossing a ridge to find what was assumed to be a new river, floating around a mountain, then climbing over the mountain, only to come back to their starting point.

After approximately 3 weeks they were discovered by Laotian villagers, one of whom killed Dengler's partner with a machete. Scrambling away with new found energy, Dengler evaded for several more days. Hallucinating, but still determined to find freedom, he was spotted through sheer luck by an Air Force pilot who called in a rescue helicopter.

Dengler had wandered 23 days in midst of the Vietcong and Pathet Lao to be picked up only 5 miles from his detention camp. His photograph on the book jacket, taken shortly after his rescue and hardly recognizable as a human being, perhaps tells more than can words of the trials he endured. Sometimes truth is more exciting than fiction, and this book should be read by all in the business of preparing for combat.

R. CRAYTON
Captain, U.S. Navy

Felger, Daniel G. *Engineering for the Officer of the Deck.* Annapolis: U.S. Naval Institute Press, 1979. 203pp.

Although greater emphasis has been placed on engineering in recent years, it still remains a black art for many naval officers. Complexity, noise and heat have deterred many from gaining a working knowledge of systems whose reliable performance is fundamental to the success of any seagoing vessel. Part of the engineering awareness problem has been a dearth of readable publications that will allow an officer to bootstrap himself to the level of knowledge at which he can competently explore and educate himself on the unique features of his own plant. Commander Felger's book is a comprehensive, yet readable guide to engineering in general and specifically deals with those areas that should be part of a competent deck officer's ready store of information concerning his ship. Drawing on a rich background of operational and administrative engineering experience, Felger skillfully blends technical information with nontechnical explanations and underscores significant points with relevant and all too real sea stories.

Contrary to most engineering texts and course curricula, this book focuses on the 1200 PSIG four boiler plant and digresses to explain the unique features of the FF-1052, FF-1040/FFG-1 classes. This is indeed proper, for the DDG-2/DDG-37/CG16/CG-26 class plants are the most complex systems (not

counting CVs) and provide a sound baseline for discussion. The book does not slight new developments, for there is ample discussion of the DD-963/FFG-7 gas turbine plants and their associated machinery.

In nine chapters Felger establishes the need for an OOD to achieve a basic level of engineering competence; he describes built-in safety features and provides the basic fundamentals of fireroom and engineroom operation. The author then outlines the successful teamwork needed between OOD and EOOW, reviews the fundamentals and hazards associated with auxiliary systems, and provides an introduction to gas turbine ships. The book concludes with a useful chapter on inspections, efficiency and economy, all of which are sensitive areas under today's operational conditions.

The 203-page book is sprinkled with useful schematics and block diagrams and features a detailed index. The use of more photographs such as found on the dust jacket would provide a better bridge between the practical and the theoretical. Also, specific examples of engineering documentation such as MRCs, 3M maintenance schedules, EOSS and EOCC would be a useful addition.

Engineering for the Officer of the Deck will be a welcome edition to wardroom libraries, but its $16.95 price will, unfortunately, preclude its becoming a mainstay of personal professional libraries. The publisher and author are to be praised for taking a major step in upgrading the professional literature in an important but often slighted area.

P.E. TOBIN
Commander, U.S. Navy

Gamble, John King, Jr., ed. *Law of the Sea: Neglected Issues.* University of Hawaii Law of the Sea Institute, 1979. 545pp.

Neglected Issues is the report of the proceedings of the 12th annual conference of the Law of the Sea Institute of the University of Hawaii, held in The Hague 23-26 October 1978. The Naval War College was represented by its then Stockton Professor of International Law, Gordon A. Christenson; a former Stockton Professor, Carl Q. Christol, was on one panel, and contributors to this *Review* also served on panels. Other U.S. Navy and Department of Defense representatives also attended.

The conference addressed seven topics: Non-nodule Resources of the Deep Seabed, Air Space and the Law of the Sea, Problems of Polar Regions, the Changing Regime for Shipping, Energy Sources from the Ocean, Military Issues in the Law of the Sea, and Sea-Use Planning in the North Sea. The address of Jens Eversen, Minister for the Law of the Sea from Norway, emphasized what is "[t]o many the main outstanding issue[,] . . . exploitation of the mineral resources of the" deep ocean floor.

Of particular interest to the professional military officer are the Air Space and Military Issues chapters. Christol's essay on "Unilateral Claims for the Use of Ocean Airspace" discusses legal problems of air defense identification zones in the context of the Exclusive Economic Zones under consideration by the LOS conference. Paul Heller's "Air Space Over Extended Jurisdictional Zones" also addresses this problem as well as the effect of the current LOS text on rights of aircraft passage and other issues vital to military interests. The longest chapter in *Neglected Issues* concerns Military Issues in the Law of the Sea. That conference session was chaired by Professor H. Gary Knight of Louisiana State University and considered "Military Implications of the Changing Law of the Sea," by Ken Booth of the University College of Wales and commentaries by Frank L. Fraser, India's chief hydrographer, VADM Shannon D. Kramer, USN (Ret.), and Michael MacGwire of Dalhousie University.

For the military professional who is in a hurry, reading these two chapters is

essential, but he would do well to digest the entire book for other chapters often touch upon the military implications of primarily civil aspects of the law of the sea. Controversial assertions, such as the belief by Robert L. Friedheim and Robert E. Bowen of the University of Southern California that "use of naval power to defend the interests of the states of the world in the uses of the oceans and its [sic] resources is very little connected to the enclosure movement or to the problems of allocating rights," should be considered for their strength in rebutting conventional doctrine. (In this instance, the argument was successfully countered by Professor Knight and the panelists who contributed to the military issues session.) The reader will broaden and deepen his knowledge by much of the balance of the book, will be amused by some of it, will agree with some conclusions, and be challenged by others.

The judge advocate or lawyer with interests in LOS, admiralty, law of armed conflict, or general public international law issues will find the entire book useful. Some chapters, such as those on ocean shipping, are policy-oriented with little black-letter "hard law," and other parts are interdisciplinary in approach, *i.e.*, John Bardach's essay on "The Relation of Ocean Energy to Ocean Food." There are several traditionally written papers on legal topics, such as Kent Keith's well-done "International Regulation of Ocean Floating Energy Platforms," which should have appeal for positivist spirits in this eclectic field.

Neglected Issues is a valuable addition to the Law of the Sea Institute's annual conference series. Its papers, recorded commentary and speeches should provide new insights into the larger issues facing the LOS conference in its second decade of negotiations.

GEORGE K. WALKER
College of William and Mary

Heinl, Robert D. *Handbook for Marine NCOs*. Annapolis: Naval Institute Press, 1979. 595pp.

Truly a believer that "The Marines take care of their own," Colonel Heinl has done just that in this handbook. It is an important and essential aid in dealing with every professional aspect of life as a Marine NCO. He explains in detail what is expected of a noncommissioned officer and describes correct, traditional, and proven methods of leadership. Everything is included from the best way to darn a sock to exhibition drill and mess night procedures. *Handbook* contains practical and professional information of value not only to NCOs and NCOs-to-be but to Marine officers and wives of Marines. It tells of survivor and retired benefits, pay, allowances, travel, and facilities and services at major posts of the Corps. *Handbook* is a valuable reference book with a universal appeal to all Marines. Strongly flavored with historical background, it painstakingly points out the development of the "Marine way" in a manner that fills the reader with a sense of pride in the Corps.

This is a book for the personal library of every officer interested in the professional development of his NCOs. For officers who want to entrust leadership responsibilities in the fullest measure to their noncommissioned officers, *Handbook* will become their bible. For Marine NCOs who seek responsibility and self-improvement, it will provide an education in the profession of arms.

BARRY E. JANKIEWICZ
Major, U.S. Marine Corps

Marshall, S.L.A., *Bringing Up The Rear*. San Rafael, Calif.: Presidio Press, 1979. 310pp.

From his enlistment in the Army at 17 until his death in 1977, Slam Marshall's first loyalty was to the country he served as a soldier, writer, scholar, tactician, operations analyst and

troubleshooter, recruiter, and confidant of the military and civilian hierarchy of the Army and other Services. *Bringing Up The Rear* is his story and is decidedly out of step with his 26 other works. It is not a product of historical scholarship but an uneven, sometimes disjointed and highly selective account of an extraordinary career that spanned all wars, conflicts, and crises involving the United States (and some not) since WWI. Marshall paints his own life in lively colors, highlighting many inside stories from his career as a soldier and newspaperman, telling stories "which require telling, either to explain myself or because they are significantly related to our history, though as yet untold."

As the youngest commissioned officer in the AEF in Europe, Marshall saw action in the Soissons, St. Mihiel, and Meuse-Argonne campaigns. After the war, he tried his hand at brickmaking and mining before landing a job as a sports reporter for the *El Paso Herald* where his long and distinguished career as a journalist began. Based in part on his coverage of the Spanish Civil War in 1936 and continued study of military affairs, Marshall's byline appeared on a daily column for the *Detroit News* and his short radio commentaries gained a widespread following on the eve of World War II.

After Pearl Harbor, Marshall was called to Washington to serve as a consultant to develop the Army orientation program, an ambitious public affairs and internal relations project, for the Secretary of War, Henry L. Stimson. From that success, he was called regularly to handle the sticky problems that were too big, too complex, or too time-consuming for general officers and their staffs. Operationally, his time during WWII was divided between the island-hopping campaigns of the Pacific and on the road to liberating Paris in Europe.

Marshall wrote the Army history of the Pacific and European campaigns *in situ*. Among other things, his memoirs reveal the unsuccessful attempts of some to influence the writing, and Marshall's firm belief that history was a valid and useful study for the military commander. He liked to work the front-lines, several times getting ahead of friendly fire. By studying a battlefield and interviewing soldiers while the smell of gunpowder was still in the air, Marshall was able to piece together a big blue arrow narration as well as the action of individual units that closed the gap between what was planned and what happened. His accounts were vividly drawn from what actually occurred and because the previous day's history might be crucial to the next day's battle, Marshall often briefed his analysis to the field commander, whether that commander was interested in it or not.

From his separation in May 1946 until 1950, Marshall was called up for active military duty as a reservist 47 times, with tours ranging from 48 hours to 6 months. He had a reputation for directness, military savvy and no-nonsense. His unusual dedication and imagination came through on the battlefield and in his accounts of operations as well as in his staff work that included writing preliminary staff studies on the NATO Alliance and chairing the subcommittee that wrote the Military Code of Conduct. He was promoted to Brigadier General in 1951.

Slam Marshall's influence as a military historian and leader will endure. His books are classic accounts of men in battle, of successes and mistakes. They are guideposts that should be read and studied by officers who may someday lead a group of fighting men or direct a military operation. These memoirs confirm the fact that Slam Marshall was a leader in the finest sense of the word. *Bringing Up The Rear* does not do justice to his life or work; for that, a biographer with Marshall's own sense of

scholarship and a patriot's sensibility is needed.

J.P. MORSE
Lieutenant Commander, U.S. Navy

Momyer, William W. *Airpower in Three Wars.* Washington: U.S. Govt. Print. Off., 1978. 358pp.

It is a delight to find that the former commander of Seventh Air Force in Vietnam had at least one thing in common with one of his aircraft commanders (this reviewer) in that we both wondered from time to time just who the heck was in charge of the war, or at least our part of it! In fact, the main theme of *Airpower in Three Wars,* and perhaps even the main theme of William Momyer's professional life, was the endless struggle to establish the principle of unity of command for airpower in any theater of war.

The author of *Airpower* has had a ringside seat to that struggle for 40 years now, and is thus an authority on the subject. He began in 1939, fought as a fighter pilot in the North African campaign of World War II, and has been constantly involved in the tactical fighter side of the USAF until he reached its pinnacle as the Commander of Tactical Air Command in the late sixties. Though the Air War College has not been as productive of airpower theory as was its pre-World War II predecessor, the Air Corps Tactical School, perhaps we can speculate that General Momyer's tour on its faculty not only gave him a firm grasp of doctrine, and a bent for the intellectual approach to war, but also the interest and the ability to write the book at hand.

The organization of *Airpower* could hardly be more conventional yet it is quite effective. At the outset there are two chapters on strategy and command and control. Then each of the roles of tactical airpower, except tactical airlift, is given its own chapter. In fact, they are presented in the same order as they appear in the basic Air Force doctrinal manuals. The penultimate chapter discusses some case studies: JUNCTION CITY, Khe Sanh, Tet and other battles. The conclusion is direct and to the point--and its main argument is that we have learned the fundamental lesson that the operational control of airpower must be centralized at the theater level too many times, and at the cost of too many lives.

The real heart of the book is the chapter on that subject, command and control. As with the other chapters, the author gives the historical background from World War II and Korea, and discusses the problem in Vietnam in great and fascinating detail. Strike airpower in Southeast Asia was controlled by a multitude of authorities. The helicopter gunships belonged to the Army. Fighters sent against North Vietnam were controlled from PACOM. Fighters (sometimes the same airplanes on different days) employed against targets in South Vietnam were commanded by 7th Air Force. The Ambassador in Thailand had a say about the way that the aircraft based there were used. The same was true in Laos. The B-52s coming in from Guam, in the last analysis, belonged to the JCS. Until 1968 the air resources with the III Marine Amphibious Force were dedicated to the support of their own troops alone--though the excess sorties were volunteered for the support of the units of other services as well. To this reviewer, who wearily raced odd-looking transports from all manner of semi-private air forces for parking spaces, the whole story seems quite credible and tragic, given the fact that it was but a replay of the painful lessons of both North Africa and Korea. In the name of what they used to tell us in the USNA naval history course about unity of command, and at the risk of stinging some of the readers of this journal, I quote Momyer:

> The route package system was a compromise approach to a tough command and control decision, an approach which, however understandable, inevitably prevented a unified, concentrated air effort. Within 7th Air Force and TF-77, aircrew ability to carry out assignments against heavily defended targets was outstanding. So the disagreement wasn't over the training and capabilities of crews, but over how best to control two air forces from two different services. The same issue arose in the Korean War, and my present fear is that our continuing failure to settle this issue may be exceedingly costly in some future conflict such as, for instance, a NATO war. Any arrangement arbitrarily assigning air forces to exclusive areas of operation will significantly reduce airpower's unique ability to quickly concentrate overwhelming firepower wherever it is needed most.

To that, general (or admiral), I say amen—especially the part about aircrew ability!

General Momyer takes some pains in many of his chapters to point out the degree to which the air war was constrained by the political requirements. In his conclusion he gives lip service to the notion that the soldier's duty is to explain the difficulties in the contemplated action to his political superior, but to salute smartly and move out once that is done. Yet the lament about the constraints is so often stated that it is worthy of comment here. Momyer compares the situation in Vietnam unfavorably to those in Europe and Korea. Yet he is too glib here. During Korea, though the U.S. monopoly in nuclear weapons was gone, we nevertheless had an overwhelming strategic superiority. During the Vietnam war the U.S.S.R. was rapidly approaching nuclear parity, and to compare it with Korea is to compare apples and oranges. I should make it clear, though, that whatever his implications, Momyer never explicitly states that the many constraints were not justified.

Airpower is not the polemic the preceding paragraphs may suggest. The memoirs of a general who did not win are generally a bore. Not so here. The book is extremely well-written, even artful. There is a host of material about the day-to-day running of the air war that should make the work a part of the personal library of every airman. Though the book relies very heavily on official publications and its few commercial sources are autobiographical items from people on our side of things, it is nonetheless heavily documented and thus a worthwhile addition to the library of the military historian.

Regrettably, the layout, design and artwork of *Airpower* does not do it justice. Some of the maps are reduced so much that the names are nearly illegible. The effects of many first-rate pictures are lost because of poor reproduction, excessive reduction, or even a missing caption. Running heads would have helped. The bibliographical information expected on the back of the title page is missing (hardcover edition). There is no indication at all of the publication date and the only thing that suggests that it might have been published by the Government Printing Office is the Air Force Seal on the cover. *Airpower* deserved better production work and one hopes it will appear in later, more attractive editions.

Even at the risk of appearing obsequious, I will say that *Airpower in Three Wars* is a work that should be read by everyone who aspires to high command and not just command of air units. Though there is not much that is surprising in the book, it *is* a competent statement of an important leader's views on a number of significant doctrinal subjects. It is quite clearly written and

not too polemical. It is a good restatement of some things that need restating. Now that the aircrew members of all the services have learned something about hanging together, isn't it about time that our generals and admirals and politicians got together enough to prevent us from hanging separately?

DAVID R. METS
Lieutenant Colonel, U.S. Air Force (Ret.)

Nitze, Paul H., Sullivan, Leonard Jr. and the Atlantic Council Working Group on Securing the Seas. *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options.* Boulder, Colo.: Westview Press, 1979. 464pp.

In 1976 at the behest of the Atlantic Council of the United States, Paul H. Nitze assembled a distinguished group of Americans knowledgeable in naval affairs to consider the Soviet Navy's projected threat to the free use of the sea by the West. Over 2 years later and after 14 meetings this Working Group on Securing the Seas has published its findings. The result is this balanced and exhaustive analysis of the Soviet naval challenge and the Western Alliance's options for meeting it.

One of its sobering conclusions is that, "There is a stark contrast between the momentum of Soviet naval development and the relative indecisiveness on the Alliance side." There is a clear message that maritime supremacy, as important to the West as ever, is slipping away from us at an accelerating pace. The situation is grim but can be corrected if Western security leaders move now with vigor and better considered direction. We must do some fast hard thinking about what we have to do to secure the seas, then do it with a will. Consideration of the options outlined in this book would be an excellent start in this urgently needed rationalization and revitalization of maritime and naval policy.

Former Secretary of the Navy Nitze's group assigns a top priority to improving Western Alliance naval counterforce capability. A strong Mahanist case is made that being able to destroy the Soviet and Pact Navies is the best and most direct way to ensure the security of the seas. This concept is advanced as the logical foundation for the formulation of a definitive Alliance naval policy.

The ambitious scope of *Securing the Seas* includes discussion of the evolution and probable wartime force allocation of both the Soviet and U.S. Navies, Western maritime interests, technology and force requirements, budget constraints, the sealane defense problems, and the overall naval/maritime balance. The study purposely does not address the effect of SALT or conventional arms limitation, the full consequences of an all-out nuclear exchange, the new Law of the Sea, and a few other topics. Still, it is a big book and the most complete coverage of maritime problems and opportunities to date.

The most useful chapters cover the Soviet Navy. The treatment by Michael MccGwire and Donald F.B. Jameson assisted by Norman Polmar is balanced, complete and up-to-date. Most significant and interesting is MccGwire's exposition of the Soviet Navy's pro-SSBN strategy in which a primary mission of many general-purpose forces may be to protect SSBNs withheld in home waters as a strategic reserve for war termination and for theater nuclear strikes. Although this theory is now generally accepted, its implications have not yet been reflected in Alliance naval policy. The set of tables on the Soviet Navy are an excellent, compact reference. A sound understanding of the Soviet naval challenge is prerequisite to building a definitive Alliance maritime policy. This is the best appraisal of the Soviet Navy and its role in peace and war currently available. *Securing the Seas* is an idea book by a group for which one selection criteria was creativity. Many logical, innovative concepts are advanced. The

reader's enthusiasm for some of the proposed technological fixes is realistically tempered by a fine passage by Ruthven Leopold of the Naval Ship Engineering Center on the problems in adopting new naval technology. However, it should not induce too much tolerance for the status quo, technological or otherwise. One of the depressing aspects of this study is that many of its most promising and easily implemented recommendations have been circulating for a decade or more. They have been warmly acknowledged as excellent ideas--and nothing has been done about them, usually in deference to long-vested and institutionally comfortable practices that may have outlived their usefulness.

Another caveat is that good naval concepts are awfully hard to sell but once accepted, the pendulum swings back with a vengeance and perception of their worth is inflated. Passive towed sonar arrays may fall into this category. We have all been around too many "technological breakthroughs" that weren't. There are no easy technical or tactical solutions in naval warfare. Fortunately, all of the Working Group's recommendations require only more complete and rational use of available technology.

After a measured overall assessment of the naval/maritime balance pulled together by Leonard Sullivan, the Working Group wraps up its task with 21 recommendations for the securing of the Western Alliance's future use of the sea. The recommendations focus on the sea control mission. All of them are substantial and are operationally, technically and economically feasible. Collectively, they are probably a more rational plan for securing the seas than the loosely lashed raft of Western policy that has drifted in gentle circles down the past decade or more.

Many of the study's conclusions and recommendations are controversial. It would be a dull group and a duller study if they weren't. The most strongly held alternative opinions are included in a final chapter. They also deserve attention.

This is a comprehensive and stimulating study that should be read by all who make and execute naval policy and others interested in our use of the sea. Secretary Nitze and his Working Group have done an important service well. This dedicated team is too good to disband. Their counsel is good and their work should continue.

HAMLIN A. CALDWELL, JR.

Pilpel, Robert H. *To the Honor of the Fleet.* New York: Atheneum, 1979. 463pp.

American novels about naval officers and warfare at sea have been fairly common in the last 30 years, and some of them have been high quality works—notably the novels of Herman Wouk and Edward L. Beach. Almost all have dealt with the subject of American naval involvement in World War II, which is pretty natural for the "two-ocean war" was unquestionably the epic adventure of U.S. seapower. What is, however, much less well known is the subject of American naval involvement in World War I. And it is this subject that Robert H. Pilpel attempts to portray in his novel *To the Honor of the Fleet.*

Pilpel succeeds in reminding us, first, of the politics of this now distant period. In the very first pages of this book we meet both Winston Churchill and Franklin Roosevelt, and are reminded that they had apprenticeships in administering the naval affairs of their respective nations prior to their greater political destinies in World War II. A few pages later we encounter Woodrow Wilson and his right-hand man, Colonel House. And the novel is filled with diplomacy and intrigue that was largely a result of Wilson's unsuccessful attempt to bring about peace, and to keep America out of the war. But the way

the reader follows the politics of the period and the related sweep of events, which includes the sinking of the Lusitania and culminates in the Battle of Jutland, is by following the careers of two American naval officers who have been assigned one each to the English and German Battle Fleets as observers, and who move back and forth to Europe from the States. Thus, besides political commentary the novel also embodies lively naval discussions and scenes, and gives the reader a vivid sense of the realities of the tactics, signals, and weapons of the time. However, while technical matters change from age to age, one is reminded by the novel's events that the essentials of decision, execution, and communications remain ever the same. The book also supports the necessity of preparedness and foresight, especially in an episode of wargaming at Newport by which the two American officers accurately forecast Jutland's later events. All of this representation of the naval affairs of the period seems carefully done.

But rather than diplomacy and naval operations, the novel's chief contribution is in its reminder that officers are also human beings, and as such often are involved in human drama and personal dilemmas that certainly include but also transcend their naval profession, and even sometimes call their professional goals and obligations into question. The personal lives of the officers in the novel are scrutinized deeply. Ultimately, the character of the two officers is the crux upon which the novel turns. In particular, it is decided upon a question of honor. And the novel is valuable in its convincing assertion that there really is such a thing, and that personal character is vital in an officer's professional decisions as in all human affairs. However, I should point out that it is an act of disobedience to an order—which the American officers consider an unlawful order—that works the successful resolution of the plot, and of American involvement in the war. Given the context, this disobedience makes sense to me, but not everyone will agree.

The novel is not a great one, nor as gripping as some. But it is serious, well-crafted, and thought-provoking, and certainly a contribution to American naval literature.

ROBERT SHENK
Lieutenant Commander, U.S. Naval Reserve

Rodger, N.A.M. *The Admiralty.* Lavenham, Suffolk: Terrance Dalton Ltd., 1979. 179pp.

Dr. Nicholas Rodger has produced the first scholarly survey of the administrative history of the Admiralty. Ranging from the medieval origins of the office of Lord Admiral to the creation of the Ministry of Defence in 1964, his book is a major contribution to English constitutional history as well as to naval history. Although it is a short volume, the author has masterfully summarized a wide range of literature in the light of a deep knowledge of the manuscript sources. With wit and keen appreciation for the telling quotation, the reader is presented with a survey that outlines the evolution of the Admiralty and the major influences that lay behind its development.

The Royal Navy has not lacked historians, but it has only been in the last 25 years that scholars have applied the standards of modern historical research to the administrative structure and direction that controlled and supported the ships and men at sea. There remains much for the historian to investigate and to explain, but this volume gives the first, satisfactory general framework upon which more detailed work can proceed. The author modestly admits that he has not covered the subject in the depth that he would prefer; however, one hopes that further, detailed studies will follow. While the reader may become so interested in the subject that he would like to have more

information, he will be, at the same time, grateful for the clear-sighted breadth of vision and the deep understanding of naval affairs which avoids a surfeit of administrative detail. In the present state of our historical understanding, Dr. Rodger has made the best choice in offering a carefully wrought, broad view rather than a definitive study.

The value and the nature of the author's method can be illustrated succinctly by quoting the striking judgment he makes after summarizing the Admiralty's administrative arrangements during the First World War:

> Three and a half years and the loss of very many ships and lives had been required to rediscover and re-interpret in new circumstances the old truisms, on which the Navy's whole administrative system had for two centuries been based, that the functions of command and direction on the one hand, and of supply and sustenance on the other, are distinct but inseparable, and that neither can flourish, or even survive, without the other.

Focusing on the Navy's administrative history in this light, one can clearly evaluate the many vicissitudes and changes that took place over the centuries. Ranging from the creation of a permanent naval administration under Henry VIII, one learns how the office of Lord Admiral evolved from one of honor and profit to administrative responsibility. Later after the assassination of the Duke of Buckingham in 1628, the first board of Admiralty was created to carry out the functions of the Lord Admiral. By 1660, after alternating between individual appointments and commissions, traditions had been established that embodied the seminal concepts of administration to be developed in later centuries. Among them were the ideas that committees could be more stable than individuals as centers of authority, and that such committees needed to be served by efficient and impartial secretaries. In this process, Samuel Pepys can be seen as the first civil servant.

From these beginnings, secretaries such as Josiah Burchett, Evan Nepean and Sir Oswyn Murray joined their efforts with Admiralty Boards under such leaders as Anson, St. Vincent, Churchill, Beatty, and Mountbatten. When the Admiralty was absorbed by the Ministry of Defence in 1964 it had survived more than 400 years as a department of state. As Dr. Rodger concludes,

> Monarchs and dynasties, statesmen and ministries came and went, the tides of war and revolution washed over and around, constantly altering but never submerging the Admiralty, and it survived them all, counter, original, spare and strange to the last.

The student of naval history has been well served by this valuable perspective and excellent analysis.

JOHN B. HATTENDORF
Naval War College

Sarkesian, Sam. *Defense Policy and the Presidency, Carter's First Years.* Boulder, Colo.: Westview Press, 1979. 341pp.

The common thread of the essays in this study of the Carter Presidency is strong criticism of his national security policy. The Introduction promises an assessment of President Carter's first 2 years in office using a well-developed conceptual framework as an analytic tool. In fact the work has little in the way of paradigm as its basis and most of the articles review significantly less than the first 2 years of the Carter administration. The work is a hodgepodge of several articles that apparently were presented at a symposium and, as so often happens, it suffers from a lack of continuity and overall scholarly quality.

The overarching conclusion is that Carter's leadership is highly suspect and that any malaise is suffered by the administration and not the public as the President has asserted. The charge of a lack of consistency in American national security policy may be well taken but the authors offer very little in the way of suggestions for improvement; they imply that such suggestions would be presumptuous. My impression is that they found the problems too difficult.

As usual in such collections, certain chapters are of more value than others. One, a highly descriptive and generally accurate distillation of American national security policy as it has evolved since World War II, doesn't even mention the President by name and it is therefore difficult to understand its inclusion in a work of this nature.

Vincent Davis' article is easily the harshest criticism of the Carter Presidency in general and national security policy as an element of this Presidency in particular. It begins with a somewhat disconnected literature survey that has little if any relationship to the main thrust of the article itself. The chapter is almost anecdotal in approach and quite frankly polemical in tone. This is best exemplified by such all too frequent asides as, "The President, and one could add, Mrs. Carter, were apparently able to retreat into their sublime sense of divine destiny whenever pressures from ordinary mortals became too severe and depressing."

Davis' insight in other areas also seems blurred, such as his attacks on HEW Secretary Califano for being more worried about his antismoking campaign than of resisting the loss of the E in his department. Most observers suggest that Califano was in fact strongly resistant and that this resistance was a major reason for his being cashiered. However, the strongest criticism of Davis and indeed for almost every chapter in the book is the one he offers himself: "All of these pages accordingly also constitute a warning that the *generalizations* [my emphasis] about the Carter administration in the remainder of this paper are to be taken as highly tentative, highly impressionistic, and perhaps premature." This judgment is particularly incisive.

Perhaps the two most scholarly, certainly best documented, chapters in the work are those by Lawrence Korb. They are highly readable and to the point. They provide excellent comparisons of the Carter defense budgets and programs with those of his predecessors. A key point stressed by Korb is that within the context of the national defense policy debate, one must realize that dollars are policy. While many observers lament this situation, it is nonetheless real. These chapters provide excellent reference material to the student of resource allocation but it is only a snapshot and events within the last several months would force Korb to revise several of his conclusions regarding Carter's declining defense budgets.

Doris Graber's analysis of the Carter administration's interventionist policies unfortunately suffers from an almost agonized definition of intervention so broad that it tends to obfuscate the rest of the discussion. Time and change have destroyed several of her conclusions such as that in which she categorically states that America's capability to intervene is hampered because "The President is committed to substantial cuts in the defense budget and substantial increases in funds for the alleviation of domestic hardships." Recent initiatives to create a "quick reactionary force" with sizable assets (perhaps $9 billion) run counter to the theme developed in this chapter. Graber also overstates several propositions throughout her article which reduces its value: as example, it is truly difficult to believe that further expansion leading to a communist sphere (whatever that means) in

Asia could make the west coast difficult to defend against invasion as the author suggests in her treatment of security issues relevant to the United States.

James Linger offers a good overview of the Carter national security policy as it relates to Europe and the Soviet Union. He formulates an excellent five-point framework that is particularly useful in understanding the Carter initiatives in Europe. Unfortunately, events subsequent to publication of the article have overtaken Linger's SALT discussion and have reduced the value of the article as history. Decisions on the MX missile system and a continuing deadlocked MBFR conference are political and military realities that affect a number of the conclusions rendered by the author. Also the Carter initiative, a high point (in terms of political bravery) of Carter's evidenced concern for improving the military capabilities of the alliance, to take on the Turkish Arms Embargo issue (attributed to Ford and Kissinger by Linger) were not foreseen by Linger. The chapter does offer an excellent analysis of Soviet motivations and European perceptions of the Carter policies, which analysis is generally lacking throughout other parts of the book.

The chapter dealing with China and Japan suffers from a tortuous introduction, a China section almost totally unrelated to how the Carter policy eventually evolved, and a Japanese section that is very general and Korea almost untreated.

George Jan quite frankly failed to appreciate the Carter commitment to normalize relations with the People's Republic and the President's intent to abrogate the U.S. security pact with Taiwan. His digression into public opinion research does not seem entirely germane to the underlying premise of the book, and is somewhat difficult to assimilate.

This reviewer hoped that the final chapter of the book would attempt to draw together the disparate parts that preceded it. However, the final chapter is a rather critical review of the book's substantive chapters, more critical than this review. Sheldon Simon certainly raises several discordant notes, some of which are valid but most have little basic relevance because they are simply the product of his own intellectual biases. His prescriptions and viewpoints are highly conjectural, emotion-laden and, in a major sense, irrelevant, which is unfortunately true of the book as a whole.

CHARLES L. FOX
Major, U.S. Air Force

Smith, Myron J., Jr. *Air War Southeast Asia, 1961-73: An Annotated Bibliography and 16 mm Film Guide.* Metuchen, N.J.: Scarecrow Press, 1979. 298pp.

Myron Smith is correct when he says that a bibliography on so recent a subject as the Vietnam war is a moving target. Still, he succeeds in his objective of writing the basic work so that future compilers will only have to add new entries as they come from the presses. This comprehensive compilation is done so competently that it should become the definitive work in its field. It is organized alphabetically, but a substantial index enables the specialized researcher to find his material quickly. Articles and books are covered in the main subdivision of the work, and lesser sections exist for Air University studies, 16mm films, sources of photographs, and material published after 1977--all are indexed. The scope of the coverage is impressive and the work should be the starting point for any project having to do with the war in Vietnam. *Air War Southeast Asia* goes well beyond the standard, but more general, *An Aerospace Bibliography* by Samuel Miller (Washington: U.S. Govt. Print. Off., 1978) and Robin Higham's *A Guide to the Sources of US Military History* (Hamden, Conn.: Archon, 1975) and

should be added to the collections of all libraries and airpower historians.

DAVID R. METS
Troy State University

Wohlstetter, Albert, et al. *Nuclear Policies: Fuel Without the Bomb.* Cambridge, Mass.: Ballinger, 1978. 107pp.

Despite the conscientious efforts of the United States, a number of states continue to creep toward the development of nuclear weapons, constantly shrinking the leadtime between a discernible interest in nuclear weapons and the actual possession of them. As the authors of *Nuclear Policies* rigorously argue, "present conventions allow activities to come too close to a bomb to give a warning [safeguards] system time to work." This argument has had enormous significance in shaping the U.S. policy response to the problem of nuclear proliferation.

In fact, *Nuclear Policies* is a logical outgrowth of the seminal study, *Moving Toward Life in a Nuclear Armed Crowd?,** which was prepared for the U.S. Arms Control and Disarmament Agency (ACDA) in 1975. The ACDA study played an important part in the formulation of the decisions of Presidents Ford and Carter to defer the commercial separation and use of plutonium in this country, and to ask other countries to join us in this moratorium. Unfortunately, while many countries share the U.S. concern with the prospect of living in a nuclear-armed crowd, they have not all shared the U.S. analysis of the problem and, as a result, have continued the construction of plutonium reprocessing facilities. Of course, the fact that makes such efforts worrisome is that plutonium--unlike reactor grade uranium--may be used without modification as a fissile explosive material in nuclear weapons.

In September 1977 Albert Wohlstetter, considered by some to be the greatest living U.S. strategist and a leading scholar of matters nuclear, testified at British hearings in which proposals were reviewed for the construction of a plutonium reprocessing facility at Windscale. Wohlstetter's testimony is reprinted (with a few additional notes) as chapter two of *Nuclear Policies.* In his testimony he systematically addresses and demolishes a number of arguments that had been marshaled to support the construction of the Windscale plant. To very briefly summarize: Wohlstetter illustrates the questionable economics involved in recycling plutonium to reduce uranium requirements; he attacks the argument that as there are other routes to nuclear weapons, restrictions on plutonium commerce are irrelevant. (Such arguments are "like opposing innoculation for smallpox because one might die of bubonic plague.") He demonstrates that the storage of unreprocessed spent reactor fuels is a safer alternative than an early commitment to commerce in plutonium; he establishes, using recently declassified information, that plutonium contained in spent power reactor fuel is neither "denatured" nor contaminated by unstable isotopes of plutonium. Therefore, it would be adequate for a fission weapon in the kiloton range, notwithstanding claims to the contrary; and he addresses the economic attractiveness of expenditures at the margin of civil nuclear programs in order to gain a nuclear weapons option, as opposed to the more costly and dangerous step of developing nuclear weapons from scratch. Wohlstetter's arguments are carefully supported, tersely presented, written in a readily accessible style (as are the other contributions in *Nuclear Policies*) and keenly persuasive to this reviewer. Sadly, the arguments

*Subsequently published in an updated and revised book as *Swords from Plowshares: The Military Potential of Civil Nuclear Energy.* Chicago: University of Chicago Press, 1979.

were not as persuasive to British members of Parliament, who voted by a government majority of 130 in the spring of 1978 (after the book went to press) to support the construction of the facility at Windscale.

Roberta Wohlstetter, the widely respected author of *Pearl Harbor: Warning and Decision*, provides a very interesting discussion of peaceful U.S. aid and the Indian nuclear program. Her chapter demonstrates the validity of the basic argument of *Nuclear Policies*, an argument that is given here in her own words:

> . . . a government can, without overtly proclaiming that it is going to make bombs (and while it says and possibly even means the opposite), undertake a succession of programs that progressively reduce the amount of time needed to make nuclear explosives, when and if it decides on that course. This can be done consciously or unconsciously, with a fixed purpose of actually exploding a device or deferring that decision until later. But it is doing more than holding out the option. It involves steady progress toward a nuclear explosive.

The relevance of this argument is well illustrated by the case of Pakistan, which received so much attention in 1979.

Pakistan, faced with the lapsing of a French agreement to build a plutonium reprocessing facility, has apparently taken necessary steps to procure the components for a uranium enrichment facility at Kahuta (north of Islamabad). The Pakistani efforts, which came to public attention in April 1979, were deemed serious enough to justify the suspension of $40 million in aid by the U.S. Government. The incongruity of the Pakistani efforts with any nonmilitary nuclear program is vividly illustrated by the fact that Pakistan's only operating nuclear reactor requires natural, *not* enriched uranium as fuel. Incidentally, while the Pakistani Government denies that it is developing nuclear weapons, there has been some discussion in Pakistan's press of "peaceful nuclear explosives"—the same term used by the Indians to describe their May 1974 atomic bomb. Even if the Pakistanis do not now intend to produce nuclear weapons, the steps that are being taken will inevitably take them closer to the option.

In addition to the chapters contributed by the Wohlstetters, Robert Gillette of the *Los Angeles Times* presents a competent and comprehensible primer on the technology of nuclear energy production and its relation to bomb making. Gillette's chapter serves as a useful introduction to the technical matters discussed in the remainder of the book.

Finally, Victor Gilinsky, a commissioner on the U.S. Nuclear Regulatory Commission and a widely respected authority on nuclear matters, provides two chapters emphasizing the attempts toward, and problems inherent in, the international control of nuclear energy. Gilinsky's chapters describe, among other things, the intense efforts that the domestic nuclear industry and the international trading partners of the United States have made to disprove any connection between civilian and military uses of nuclear energy. However, if we have learned anything it is that there are not two atoms—one benign and the other destructive—but only one, and the proliferation of dangerous peaceful nuclear facilities has also increased the likelihood of proliferation of another sort.

Roberta Wohlstetter offers some thoughts on a U.S. nonproliferation policy for both India and Pakistan. Her ideas, however, may be applied far more widely. She recognizes, as some U.S. policymakers have not, the need for the United States to address legitimate or perceived military challenges if the

nuclear proliferation incentives are to be dampened (a factor applicable to Taiwan and South Korea, among others). She counsels that the abandonment of the Indian program might be used as a lever for securing a similar commitment from Pakistan; however, this is a problematic option given the levels of distrust and hatred that reside in the subcontinent. She also ponders the possibility that India might be given proprietary rights to the plutonium in its irradiated fuel, which would then be returned to the United States. If it were ever reprocessed, India would receive appropriate credits toward the cost of slightly enriched uranium fuel substituted by the United States. Most important, Dr. Wohlstetter recommends a firm U.S. policy that should condition future nuclear cooperation on the acceptance of fuel-cycle safeguards. This final recommendation is one of the clear messages of *Nuclear Policies.*

Perhaps the single guiding principle for the conduct of U.S. nonproliferation policies should be a quotation taken from Florence Nightingale and often quoted by Albert Wohlstetter: "Whatever else hospitals do, they shouldn't spread disease."

AUGUSTUS RICHARD NORTON
Major, U.S. Army

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Ann Hardy, with Kathleen Ashook
Doris Baginski and Mary Ann Varoutsos

Askari, Hossein and Cummings, John F. *Oil, OECD and the Third World: a Vicious Triangle?* Austin, Tex.: Center for Middle Eastern Studies, 1978. 137pp. $4.95

OPEC's oil-pricing policies during 1973-1974 are examined to determine their effect on the world economy, and particularly on the countries of the Third World. A cooperative plan between OPEC and the industrialized nations to provide assistance to the less-developed countries is seen as the only means through which the poorer countries might attain a measure of long-range economic growth.

Ausland, John C. *Norway, Oil, and Foreign Policy.* Boulder, Colo.: Westview Press, 1979. 140pp. $15.00

Norway as an oil-producing nation is examined from an international perspective. Such issues as the management of terrorist attacks and blowouts; the diplomatic conflicts over the oilfields in the Barents and North Seas; and the problems related to pricing, profits, and pace of production are scrutinized with regard to Norway's future prospects. Though lacking an index and a bibliography, this timely publication is the first English-language study of its kind. It is based on interviews, correspondence, official reports, and parliamentary debates.